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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/981,268
Filing Date: October 17, 2001
Appellant(s): WENZEL ET AL.

Kevin Smith (Reg. No.: 38,620)
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 22 August 2007 appealing from the Office action mailed 05 June 2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

A. Patent Documents

2002/0067704	TON	06-2002
2002/0078238	TROXEL ET AL.	06-2002
6,615,050	TIEDAMANN, JR. ET AL.	09-2003
5,590,092	FEHNEL	12-1996

B. Non-Patent Documents

Perkins, C. "IP Mobility Support" Network Working Group - Request for Comments:
2002, October 1996, pgs. 1-79, XP-002222715.

Jue, J. et al. "Design and Analysis of a Replicated Server Architecture for Supporting IP
Host Mobility" Mobile Computing and Communications Review, vol. 2, no. 3, July 01,
1998, pgs. 16-23, XP-000768934.

Perkins, C. E. "Mobile Networking Through Mobile IP" IEEE Internet Computing,
January 1998, pgs. 58-69, XP-000764776.

(9) Grounds of Rejection Applicable to the Appealed Claims

The following ground(s) of rejection are applicable to the appealed claims:

A. Claim Rejections - 35 USC § 103

Claims 1, 7-9, 15, and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Ton (US 2002/0067704 A1)** in view of **Perkins ("IP Mobility Support")**.

Regarding **claim 1**, Ton discloses a method for registering a subscriber unit with a home agent in a cellular system (see pg. 2, [0019]; Figs. 2-5), where a cellular system incorporating data communications packet switched networks and that deploys several home agents and a subscriber unit or mobile node, the method comprising:

storing addresses for a plurality of home agents in the subscriber unit (see pgs. 2-3, [0023, 0028]; pg. 5, [0060-0062]), wherein the cellular system/network provides a list of home agents attached to a mobile IP reply message (Mobile IP RRP) through which the subscriber unit may register, and subsequently the subscriber unit stores said list of alternate home agents for redundancy support,

wherein the plurality of home agents includes a primary home agent and a plurality of secondary home agents (see pgs. 2-3, [0023-0026, 0028]; pg. 4, [0055-0057]; pg. 5, [0060-0062]), wherein the subscriber unit is statically configured to a primary home agent for registration and in case of failure, the network provides a list of secondary home agents through which the subscriber unit may register, or in an alternate embodiment the list is statically configured as well as in the subscriber unit if no modifications are made in the system/network mobility agents;

attempting registration with the primary home agent (see Fig. 1);

failing to achieve registration with the primary home agent (see pg. 3, [0036, 0040]; pg. 4, [0044]; pg. 6, [0081]), where the subscriber unit is statically configured to attempt registration with a given #1 home agent (HA1);

the subscriber unit selecting a secondary home agent from the plurality of secondary home agents in an attempt to balance load among the plurality of secondary home agents (see pg. 3, [0040]), where the mobile node attempting registration with a primary home agent (HA1), subsequently the network attempting to balance the load between different or secondary home agents, and through the network selecting or choosing a home agent having a lower load; and

attempting registration with the secondary home agent (see pg. 3, [0040]; pg. 5, [0063-0064]; Fig. 1 "steps 150-180"), wherein the subscriber unit selects and attempts registration with a secondary home agent due to failure when attempting registration with a primary home agent. However, Ton does not specifically disclose storing the address prior to the first attempt of registration.

In the same field of endeavor, Perkins clearly discloses that a mobile node (subscriber unit) in a mobile IP communication system can be configured to store IP addresses of one or more home agents (i.e., primary and secondary home agents) for discovering and registration in the system (see pgs. 34-35, section 3.6).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Ton and Perkins to have the feature to store addresses in the subscriber prior to registration, as taught by Perkins, in the method disclosed by Ton for the purpose of efficiently achieving registration.

Regarding **claim 7**, Ton discloses every limitation claimed as applied above in claim 1. Ton does not specifically disclose having the feature wherein the plurality of addresses for the home agents stored in the subscriber unit is programmed by a service provider prior to delivering the subscriber unit to its subscriber. However, the examiner maintains that the feature wherein the plurality of addresses for the home agents stored in the subscriber unit is programmed by a service provider prior to delivering the subscriber unit to its subscriber was well known in the art, as taught by Perkins.

In the same field of endeavor, Perkins clearly discloses having the feature wherein the plurality of addresses for the home agents stored in the subscriber unit is programmed by a service provider prior to delivering the subscriber unit to its subscriber (see pgs. 34-35, section 3.6), where a mobile node is configured with IP addresses.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Ton and Perkins to have the feature wherein the plurality of addresses for the home agents stored in the subscriber unit is programmed by a service provider prior to delivering the subscriber unit to its subscriber, as taught by Perkins, in the method disclosed by Ton for the purpose of efficiently achieving registration.

Regarding **claim 8**, the combination of Ton and Perkins discloses every limitation claimed, as applied above (see claim 1), in addition Ton further discloses the method of claim 1, wherein the plurality of addresses for the home agents stored in the subscriber unit is programmed by the service provider using over the air access (see pg. 4, [0055-0057]; pg. 5, [0060-0062]), wherein in case of failure attempting registration with a

primary home agent, the network which is incorporated in a wireless or cellular system delivers mobile IP replies to the subscriber unit in a wireless fashion so that the subscriber unit can select from a list of alternate home agents for attempting registration.

Regarding **claim 9**, the combination of Ton and Perkins discloses every limitation claimed, as applied above (see claim 1), in addition Ton further discloses the method of claim 1, wherein at least some of the plurality of addresses for the home agents stored in the subscriber unit is reprogrammed by the service provider using over the air access (see pg. 4, [0055-0057]; pgs. 5-6, [0060-0062, 0075-0078]), where reprogramming means such as the service provider or home network incorporated into a wireless or cellular system replying in a wireless fashion with additional or alternate home agents for the subscriber unit to attempt registration when failure at attempting registration occurs with a primary home agent.

Regarding **claim 15**, Ton discloses a subscriber unit that operates within a cellular system, the subscriber unit comprising:

- an antenna (see pg. 1, [0002-0003]), where a mobile terminal that comprises the RF features such as an antenna, a radio frequency, and a digital processor;

- a radio frequency unit coupled to the antenna (see pg. 1, [0002-0003]), where a mobile terminal that comprises the RF features such as an antenna, a radio frequency, and a digital processor; and

- at least one digital processor coupled to the radio frequency unit that executes software instructions (see pg. 1, [0002-0003]), where a mobile terminal that comprises the RF features such as an antenna, a radio frequency, and a digital processor,

causing the subscriber unit to:

store addresses for a plurality of home agents in the subscriber unit (see pgs. 2-3, [0023, 0028]; pg. 5, [0060-0062]), wherein the cellular system/network provides a list of home agents attached to a mobile IP reply message (Mobile IP RRP) through which the subscriber unit may register, and subsequently the subscriber unit stores said list of alternate home agents for redundancy support, in which that redundancy support could be handled on a software redundancy implementation,

wherein the plurality of home agents includes a primary home agent and a plurality of secondary home agents (see pgs. 2-3, [0023-0026, 0028]; pg. 4, [0055-0057]; pg. 5, [0060-0062]), wherein the subscriber unit is statically configured to a primary home agent for registration and in case of failure, the network provides a list of secondary home agents through which the subscriber unit may register, or in an alternate embodiment the list is statically configured as well as in the subscriber unit if no modifications are made in the system/network mobility agents;

attempt registration with the primary home agent (see pg. 3, [0036, 0040]; pg. 4, [0044]; pg. 6, [0081]), where the subscriber unit is statically configured to attempt registration with a given #1 home agent (HA1);

failing to achieve registration with the primary home agent (see pg. 3, [0038-0039]; Fig. 1 "steps 120-140"), wherein the request for registration of the subscriber unit is not completed due to failure of the primary home agent;

select a secondary home agent from the plurality of secondary home agents in an attempt to balance load among the plurality of secondary home agents (see pg. 3, [0040]),

where the mobile node attempting registration with a primary home agent (HA1), subsequently the network attempting to balance the load between different or secondary home agents, and through the network selecting or choosing a home agent having a lower load; and

attempt registration with the secondary home agent (see pg. 3, [0040]; pg. 5, [0063-0064]; Fig. 1 “steps 150-180”), wherein the subscriber unit selects and attempts registration with a secondary home agent due to failure when attempting registration with a primary home agent. However, Ton does not specifically disclose storing the address prior to the first attempt of registration.

In the same field of endeavor, Perkins clearly discloses that a mobile node (subscriber unit) in a mobile IP communication system can be configured to store IP addresses of one or more home agents (i.e., primary and secondary home agents) for discovering and registration in the system (see pgs. 34-35, section 3.6).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Ton and Perkins to have the feature to store addresses in the subscriber prior to registration, as taught by Perkins, in the method disclosed by Ton for the purpose of efficiently achieving registration.

Regarding **claim 21**, Ton discloses every limitation claimed as applied above in claim 15. Ton does not specifically disclose having the feature wherein the plurality of addresses for the home agents stored in the subscriber unit is programmed by a service provider prior to delivering the subscriber unit to its subscriber. However, the examiner maintains that the feature wherein the plurality of addresses for the home agents stored in

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the subscriber unit is programmed by a service provider prior to delivering the subscriber unit to its subscriber was well known in the art, as taught by Perkins.

In the same field of endeavor, Perkins clearly discloses having the feature wherein the plurality of addresses for the home agents stored in the subscriber unit is programmed by a service provider prior to delivering the subscriber unit to its subscriber (see pgs. 34-35, section 3.6), where a mobile node is configured with IP addresses.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Ton and Perkins to have the feature wherein the plurality of addresses for the home agents stored in the subscriber unit is programmed by a service provider prior to delivering the subscriber unit to its subscriber, as taught by Perkins, in the method disclosed by Ton for the purpose of efficiently achieving registration.

Regarding **claim 22**, the combination of Ton and Perkins discloses every limitation claimed, as applied above (see claim 15), in addition Ton further discloses the method of claim 15, wherein the plurality of addresses for the home agents stored in the subscriber unit is programmed by the service provider using over the air access (see pg. 4, [0055-0057]; pg. 5, [0060-0062]), wherein in case of failure attempting registration with a primary home agent, the network which is incorporated in a wireless or cellular system delivers mobile IP replies to the subscriber unit in a wireless fashion so that the subscriber unit can select from a list of alternate home agents for attempting registration.

Regarding **claim 23**, the combination of Ton and Perkins discloses every limitation claimed, as applied above (see claim 15), in addition Ton further discloses the

method of claim 15, wherein at least some of the plurality of addresses for the home agents stored in the subscriber unit is reprogrammed by the service provider using over the air access (see pg. 4, [0055-0057]; pgs. 5-6, [0060-0062, 0075-0078]), where reprogramming means such as the service provider or home network incorporated into a wireless or cellular system replying in a wireless fashion with additional or alternate home agents for the subscriber unit to attempt registration when failure at attempting registration occurs with a primary home agent.

Claims 2-3, 10-11, and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Ton (US 2002/0067704 A1)** in view of **Perkins ("IP Mobility Support")** as applied to claims 1 and 15 above, and further in view of **Troxel et al. (hereinafter Troxel) (US 2002/0078238 A1)**.

Regarding **claim 2**, the combination of Ton and Perkins discloses every limitation claimed, as applied above (see claim 1), in addition Ton further discloses the method of claim 1, further comprises:

the subscriber unit rank ordering the plurality of secondary home agents into at least a first secondary home agent and a second secondary home agent (see pg. 6, [0082]), wherein the plurality of secondary home agents are ranked, so when one registration attempt fails with the current home agent, the next secondary home agent becomes the new primary home agent changing its rank to 1. The combination of Ton and Perkins does not specifically disclose having the feature the subscriber unit rank ordering the plurality of home agents. However, the examiner maintains that the feature the

subscriber unit rank ordering the plurality of home agents was well known in the art, as taught by Troxel.

In the same field of endeavor, Troxel discloses the feature the subscriber unit rank ordering the plurality of home agents (see pg. 4, [0051]), wherein a mobile node ranks foreign agents based on several factors such as services and capacity.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Ton, Perkins, and Troxel to have the feature the subscriber unit rank ordering the plurality of home agents, in order to relay and assist network management decision procedures, thus setting up a faster registration for a particular subscriber, as taught by Troxel.

Regarding **claim 3**, the combination of Ton, Perkins, and Troxel discloses every limitation claimed, as applied above (see claim 2), in addition Ton further discloses the method of claim 2, further comprising:

attempting registration with the first secondary home agent (see pg. 3, [0036, 0040]; pg. 4, [0044]; pg. 6, [0081]), wherein the subscriber unit attempts registration with an alternate or first secondary home agent (HA2);

failing to achieve registration with the first secondary home agent (see pg. 3, [0040]; pg. 5, [0063-0064]; Fig. 1 “steps 150-180”), wherein the subscriber unit selects and attempts registration with a secondary home agent due to failure when attempting registration with a previous home agent; and

attempting registration with the second secondary home agent (see pg. 3, [0036, 0040]; pg. 5, [0063-0064]; Fig. 1 “steps 150-180”), wherein the objective of the invention

is to provide alternate home agents in case of failure when attempting registration with a current home agent, subsequently attempting registration if such consecutive failure occurs during the process, therefore the subscriber unit selects and attempts registration with a second secondary home agent due to failure when attempting registration with a previous home agent.

Regarding **claim 10**, Ton discloses a method for registering a subscriber unit with a home agent in a cellular system (see pg. 2, [0019]; Figs. 2-5), where a cellular system incorporating data communications packet switched networks and that deploys several home agents and a subscriber unit or mobile node, the method comprising:

storing addresses for a plurality of home agents in the subscriber unit (see pgs. 2-3, [0023, 0028]; pg. 5, [0060-0062]), wherein the cellular system/network provides a list of home agents attached to a mobile IP reply message (Mobile IP RRP) through which the subscriber unit may register, and subsequently the subscriber unit stores said list of alternate home agents for redundancy support, in which that redundancy support,

wherein the plurality of home agents includes a primary home agent and a plurality of secondary home agents (see pgs. 2-3, [0023-0026, 0028]; pg. 4, [0055-0057]; pg. 5, [0060-0062]), wherein the subscriber unit is statically configured to a primary home agent for registration and in case of failure, the network provides a list of secondary home agents through which the subscriber unit may register, or in an alternate embodiment the list is statically configured as well as in the subscriber unit if no modifications are made in the system/network mobility agents;

attempting registration with the primary home agent (see pg. 3, [0036, 0040]; pg. 4, [0044]; pg. 6, [0081]), where the subscriber unit is statically configured to attempt registration with a given #1 home agent (HA1);

failing to achieve registration with the primary home agent (see pg. 3, [0038-0039]; Fig. 1 “steps 120-140”), wherein the request for registration of the subscriber unit is not completed due to failure of the primary home agent;

rank ordering the plurality of secondary home agents into at least a first secondary home agent and a second secondary home agent (see pg. 6, [0082]), wherein the plurality of secondary home agents are ranked, so when one registration attempt fails with the current home agent, the next secondary home agent becomes the new primary home agent changing its rank to 1,

in an attempt to balance load among the plurality of secondary home agents (see pg. 3, [0040]), where mobile node attempting registration with a primary home agent (HA1), subsequently the network attempting to balanced the load between different or secondary home agents, and through the network selecting or choosing a home agent having a lower load; and

attempting registration with the first secondary home agent (see pg. 3, [0040]; pg. 5, [0063-0064]; Fig. 1 “steps 150-180”), wherein the subscriber unit selects and attempts registration with a secondary home agent due to failure when attempting registration with a previous home agent. However, Ton does not specifically disclose storing the address prior to the first attempt of registration.

In the same field of endeavor, Perkins clearly discloses that a mobile node (subscriber unit) in a mobile IP communication system can be configured to store IP addresses of one or more home agents (i.e., primary and secondary home agents) for discovering and registration in the system (see pgs. 34-35, section 3.6).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Ton and Perkins to have the feature to store addresses in the subscriber prior to registration, as taught by Perkins, in the method disclosed by Ton for the purpose of efficiently achieving registration. The combination of Ton and Perkins does not specifically disclose having the feature the subscriber unit rank ordering the plurality of home agents. However, the examiner maintains that the feature the subscriber unit rank ordering the plurality of home agents was well known in the art, as taught by Troxel.

In the same field of endeavor, Troxel discloses the feature the subscriber unit rank ordering the plurality of home agents (see pg. 4, [0051]), wherein a mobile node ranks foreign agents based on several factors such as services and capacity.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Ton, Perkins, and Troxel to have the feature the subscriber unit rank ordering the plurality of home agents, in order to relay and assist network management decision procedures, thus setting up a faster registration for a particular subscriber, as taught by Troxel.

Regarding **claim 11**, the combination of Ton, Perkins, and Troxel discloses every limitation claimed, as applied above (see claim 10), in addition Ton further discloses the method of claim 10, further comprising:

failing to achieve registration with the first secondary home agent (see pg. 3, [0040]; pg. 5, [0063-0064]; Fig. 1 “steps 150-180”), wherein the subscriber unit selects and attempts registration with a secondary home agent due to failure when attempting registration with a previous home agent; and

attempting registration with the second secondary home agent (see pg. 3, [0036, 0040]; pg. 5, [0063-0064]; Fig. 1 “steps 150-180”), wherein the objective of the invention is to provide alternate home agents in case of failure when attempting registration with a current home agent, subsequently attempting registration if such consecutive failure occurs during the process, therefore the subscriber unit selects and attempts registration with a second secondary home agent due to failure when attempting registration with a previous home agent.

Regarding **claim 16**, the combination of Ton and Perkins discloses every limitation claimed, as applied above (see claim 15), in addition Ton further discloses the subscriber unit of claim 15, wherein execution of the software instructions further causes the subscriber unit to:

rank ordering the plurality of secondary home agents into at least a first secondary home agent and a second secondary home agent (see pg. 6, [0082]), wherein the plurality of secondary home agents are ranked, so when one registration attempt fails with the current home agent, the next secondary home agent becomes the new primary home

agent changing its rank to 1. The combination of Ton and Perkins does not specifically disclose having the feature the subscriber unit rank ordering the plurality of home agents. However, the examiner maintains that the feature the subscriber unit rank ordering the plurality of home agents was well known in the art, as taught by Troxel.

In the same field of endeavor, Troxel discloses the feature the subscriber unit rank ordering the plurality of home agents (see pg. 4, [0051]), wherein a mobile node ranks foreign agents based on several factors such as services and capacity.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Ton, Perkins, and Troxel to have the feature the subscriber unit rank ordering the plurality of home agents, in order to relay and assist network management decision procedures, thus setting up a faster registration for a particular subscriber, as taught by Troxel.

Regarding **claim 17**, the combination of Ton, Perkins, and Troxel discloses every limitation claimed, as applied above (see claim 16), in addition Ton further discloses the subscriber unit of claim 16, wherein execution of the software instructions further causes the subscriber unit to:

attempting registration with the first secondary home agent (see pg. 3, [0036, 0040]; pg. 4, [0044]; pg. 6, [0081]), wherein the subscriber unit attempts registration with an alternate or first secondary home agent (HA2);

failing to achieve registration with the first secondary home agent (see pg. 3, [0040]; pg. 5, [0063-0064]; Fig. 1 “steps 150-180”), wherein the subscriber unit selects and

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attempts registration with a secondary home agent due to failure when attempting registration with a previous home agent; and

attempting registration with the second secondary home agent (see pg. 3, [0036, 0040]; pg. 5, [0063-0064]; Fig. 1 “steps 150-180”), wherein the objective of the invention is to provide alternate home agents in case of failure when attempting registration with a current home agent, subsequently attempting registration if such consecutive failure occurs during the process, therefore the subscriber unit selects and attempts registration with a second secondary home agent due to failure when attempting registration with a previous home agent.

Claims 4 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Ton (US 2002/0067704 A1)** in view of **Perkins (“IP Mobility Support”)** and further in view of **Troxel et al. (hereinafter Troxel) (US 2002/0078238 A1)** as applied to claims 2 and 10 above, and further in view of **Jue et al. (hereinafter Jue) (“Design and Analysis of a Replicated Server Architecture for Supporting IP Host Mobility”)** and **Tiedemann et al. (hereinafter Tiedemann) (US 6,615,050 B1)**.

Regarding **claim 4**, the combination of Ton, Perkins, and Troxel discloses every limitation claimed as applied above in claim 2. The combination of Ton, Perkins, and Troxel does not specifically disclose having the features the subscriber unit generating a random number; and the subscriber unit using the random number to rank order the plurality of secondary home agents. However, the examiner maintains that the features

generating a random number; and using the random number to rank order the plurality of secondary home agents was well known in the art, as taught by Jue.

In the same field of endeavor, Jue discloses the features generating a random number; and using the random number to rank order the plurality of secondary home agents (see pg. 20, cols. 1-2; pg. 21, col. 2; pg. 22, col. 1; pg. 23, col. 1), where a method for randomly selecting home agents for achieving higher load gains.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Ton, Perkins, Troxel, and Jue to have the features generating a random number; and the subscriber unit using the random number to rank order the plurality of secondary home agents, in order to improve performance when balancing load between home agents during high or irregular traffic volume rate, as taught by Jue. The combination of Ton, Perkins, Troxel, and Jue does not specifically disclose having the feature the subscriber unit generating a random number. However, the examiner maintains that the feature the subscriber unit generating a random number was well known in the art, as taught by Tiedemann.

In the same field of endeavor, Tiedemann discloses the feature the subscriber unit generating a random number (see col. 4, lines 46-62), wherein a mobile station generates a random number.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Ton, Perkins, Troxel, Jue, and Tiedemann to have the feature the subscriber unit generating a random number, in order

to delay information broadcast at random intervals, thus avoiding collision, as taught by Tiedemann.

Regarding **claim 12**, the combination of Ton, Perkins, and Troxel discloses every limitation claimed as applied above in claim 10. The combination of Ton, Perkins, and Troxel does not specifically disclose having the features the subscriber unit generating a random number; and the subscriber unit using the random number to rank order the plurality of secondary home agents. However, the examiner maintains that the features generating a random number; and using the random number to rank order the plurality of secondary home agents was well known in the art, as taught by Jue.

In the same field of endeavor, Jue discloses the features generating a random number; and using the random number to rank order the plurality of secondary home agents (see pg. 20, cols. 1-2; pg. 21, col. 2; pg. 22, col. 1; pg. 23, col. 1), where a method for randomly selecting home agents for achieving higher load gains.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Ton, Perkins, Troxel, and Jue to have the features generating a random number; and the subscriber unit using the random number to rank order the plurality of secondary home agents, in order to improve performance when balancing load between home agents during high or irregular traffic volume rate, as taught by Jue. The combination of Ton, Perkins, Troxel, and Jue does not specifically disclose having the feature the subscriber unit generating a random number. However, the examiner maintains that the feature the subscriber unit generating a random number was well known in the art, as taught by Tiedemann.

In the same field of endeavor, Tiedemann discloses the feature the subscriber unit generating a random number (see col. 4, lines 46-62), wherein a mobile station generates a random number.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Ton, Perkins, Troxel, Jue, and Tiedemann to have the feature the subscriber unit generating a random number, in order to delay information broadcast at random intervals, thus avoiding collision, as taught by Tiedemann.

Claims 5-6 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Ton (US 2002/0067704 A1)** in view of **Perkins** (hereinafter Perkins A) (“**IP Mobility Support**”) and further in view of **Troxel et al.** (hereinafter Troxel) (**US 2002/0078238 A1**) as applied to claims 2 and 10 above, and further in view of **Perkins** (hereinafter Perkins B) (“**Mobile Networking Through Mobile IP**”) and **Fehnel (US 5,590,092)**.

Regarding **claims 5 and 6**, the combination of Ton, Perkins (A), and Troxel discloses every limitation claimed as applied above in claim 2. The combination of Ton, Perkins (A), and Troxel does not specifically disclose having the features the subscriber unit determining a current date; and the subscriber unit using the current date to rank order the plurality of secondary home agents. However, the examiner maintains that the features determining a current date; and using the current date to rank order the plurality of secondary home agents was well known in the art, as taught by Perkins (B).

In the same field of endeavor, Perkins (B) discloses the features determining a current date; and using the current date to rank order the plurality of secondary home agents (see pg. 62, col. 2 - pg. 63, col. 1), wherein the network employs unique identification fields using timestamps when a subscriber unit is requesting registration with a home agent.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Ton, Perkins (A), Troxel, and Perkins (B) to have the features determining a current date; and using the current date to rank order the plurality of secondary home agents, in order to secure registration requests by differing each registration from another, as taught by Perkins (B). The combination of Ton, Perkins (A), Troxel, and Perkins (B) does not specifically disclose having the feature the subscriber unit generating a current date or time. However, the examiner maintains that the feature the subscriber unit generating a current date or time was well known in the art, as taught by Fehnel.

In the same field of endeavor, Fehnel discloses the feature the subscriber unit generating a current date or time (see col. 3, lines 26-39), where a cellular radiotelephone comprises means for generating a current time of day.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Ton, Perkins (A), Troxel, Perkins (B), and Fehnel to have the feature the subscriber unit generating a current date or time, in order to generate time without the addition of a real time clock chip in the subscriber unit, as taught by Fehnel.

Regarding **claims 13 and 14**, the combination of Ton, Perkins (A), and Troxel discloses every limitation claimed as applied above in claim 10. The combination of Ton, Perkins (A), and Troxel does not specifically disclose having the features the subscriber unit determining a current date; and the subscriber unit using the current date to rank order the plurality of secondary home agents. However, the examiner maintains that the features determining a current date; and using the current date to rank order the plurality of secondary home agents was well known in the art, as taught by Perkins (B).

In the same field of endeavor, Perkins (B) discloses the features determining a current date; and using the current date to rank order the plurality of secondary home agents (see pg. 62, col. 2 - pg. 63, col. 1), wherein the network employs unique identification fields using timestamps when a subscriber unit is requesting registration with a home agent.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Ton, Perkins (A), Troxel, and Perkins (B) to have the features determining a current date; and using the current date to rank order the plurality of secondary home agents, in order to secure registration requests by differing each registration from another, as taught by Perkins (B). The combination of Ton, Perkins (A), Troxel, and Perkins (B) does not specifically disclose having the feature the subscriber unit generating a current date or time. However, the examiner maintains that the feature the subscriber unit generating a current date or time was well known in the art, as taught by Fehnel.

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In the same field of endeavor, Fehnel discloses the feature the subscriber unit generating a current date or time (see col. 3, lines 26-39), where a cellular radiotelephone comprises means for generating a current time of day.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Ton, Perkins (A), Troxel, Perkins (B), and Fehnel to have the feature the subscriber unit generating a current date or time, in order to generate time without the addition of a real time clock chip in the subscriber unit, as taught by Fehnel.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Ton (US 2002/0067704 A1)** in view of **Perkins ("IP Mobility Support")** and further in view of **Troxel et al. (hereinafter Troxel) (US 2002/0078238 A1)** as applied to claim 17 above, and further in view of **Jue et al. (hereinafter Jue) ("Design and Analysis of a Replicated Server Architecture for Supporting IP Host Mobility")**.

Regarding **claim 18**, the combination of Ton, Perkins, and Troxel discloses every limitation claimed as applied above in claim 17. The combination of Ton, Perkins, and Troxel does not specifically disclose having the features generate a random number; and use the random number to rank order the plurality of secondary home agents. However, the examiner maintains that the features generate a random number; and use the random number to rank order the plurality of secondary home agents was well known in the art, as taught by Jue.

In the same field of endeavor, Jue discloses the features generate a random number; and use the random number to rank order the plurality of secondary home agents (see pg. 20, cols. 1-2; pg. 21, col. 2; pg. 22, col. 1; pg. 23, col. 1), where a method for randomly selecting home agents for achieving higher load gains.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Ton, Perkins, Troxel, and Jue to have the features generate a random number; and use the random number to rank order the plurality of secondary home agents, in order to improve performance when balancing load between home agents during high or irregular traffic volume rate, as taught by Jue.

Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Ton (US 2002/0067704 A1)** in view of **Perkins** (hereinafter Perkins A) ("**IP Mobility Support**") and further in view of **Troxel et al.** (hereinafter Troxel) (**US 2002/0078238 A1**) as applied to claim 17 above, and further in view of **Perkins** (hereinafter Perkins B) ("**Mobile Networking Through Mobile IP**").

Regarding **claims 19 and 20**, the combination of Ton, Perkins (A), and Troxel discloses every limitation claimed as applied above in claim 17. The combination of Ton, Perkins (A), and Troxel does not specifically disclose having the features the subscriber unit determining a current date; and the subscriber unit using the current date to rank order the plurality of secondary home agents. However, the examiner maintains that the features determining a current date; and using the current date to rank order the plurality of secondary home agents was well known in the art, as taught by Perkins (B).

In the same field of endeavor, Perkins (B) discloses the features determining a current date; and using the current date to rank order the plurality of secondary home agents (see pg. 62, col. 2 - pg. 63, col. 1), wherein the network employs unique identification fields using timestamps when a subscriber unit is requesting registration with a home agent.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Ton, Perkins (A), Troxel, and Perkins (B) to have the features determining a current date; and using the current date to rank order the plurality of secondary home agents, in order to secure registration requests by differing each registration from another, as taught by Perkins (B).

(10) Response to Argument

The Examiner's response to the arguments of the brief concerning the art rejection of claims 1-23 are as follows:

A1. Argument of Claims 1, 7-9, 15, and 21-23 (see pg. 16, section G(1)(a), 2nd paragraph (¶) of brief)

Appellant argues - ...does not provide for redundancy upon an initial inability for a mobile terminal to register with the network...

A2. Response to argument of A1

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies

(i.e., ...an **initial inability**...to register with the **network**...) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Regarding applicant's argument (see above), the applicant's argument relies on a feature(s) not recited in the claim(s).

Furthermore, the Examiner respectfully disagrees with appellant's argument. Appellant has failed to interpret and appreciate the combined teachings of the prior art Ton and Perkins that clearly discloses the claimed feature(s) as would be clearly recognized by one of ordinary skill in the art. As a note, the instant application (see pg. 7, lines 9-15; pg. 9, lines 3-6; Fig. 1) shows how the subscriber unit (110) connects with base station (102) of the cellular network to communicate with other components of the system. In particular, Ton discloses the feature(s) language redundancy upon an initial inability for a mobile terminal to register with the network (see abstract; pg. 3, [0036, 0040]; pg. 4, [0044]; pg. 6, [0081]), where the subscriber unit (mobile node MN) is statically configured to attempt registration with a given #1 home agent (HA1). The mobile node (MN) first attempts to register with a primary home agent (e.g., HA1) (see abstract). When there is a failure of the primary home agent, the mobile node will attempt register with a redundant (or secondary or alternate) home agent (HA2) (see pg. 3, [0039-0040]; pg. 5, [0063-0065]; Figs. 1 and 4), where the mobile node can be configured to with the address of a number of home agents and learn additional addresses by visiting other networks.

B1. Argument of Claims 1, 7-9, 15, and 21-23 (see pg. 18, section G(1)(b), 2nd ¶ of brief)

Appellant argues - ...does not address instances where the home agent is inoperable and subsequent actions are taken...

B2. Response to argument of B1

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Furthermore, the Examiner respectfully disagrees with appellant's argument. Appellant has failed to interpret and appreciate the combined teachings of the prior art Ton and Perkins that clearly discloses the claimed feature(s) as would be clearly recognized by one of ordinary skill in the art. In particular, Ton discloses the language of *item B1* above which appears to be similar to feature(s) failing to achieve registration with the primary home agent (see pg. 3, [0036, 0040]; pg. 4, [0044]; pg. 6, [0081]), where the subscriber unit is statically configured to attempt registration with a given #1 home agent (HA1);

the subscriber unit selecting a secondary home agent from the plurality of secondary home agents in an attempt to balance load among the plurality of secondary home agents (see pg. 3, [0040]), where the mobile node attempting registration with a primary home agent (HA1), subsequently the network attempting to balance the load between different

or secondary home agents, and through the network selecting or choosing a home agent having a lower load; and

attempting registration with the secondary home agent (see pg. 3, [0040]; pg. 5, [0063-0064]; Fig. 1 “steps 150-180”), where the subscriber unit selects and attempts registration with a secondary home agent (HA2) due to failure when attempting registration with a primary home agent. As further support in the same field of endeavor, Perkins discloses of a mobile node being configured with the address of more than one home agent (i.e., primary and secondary home agents) (see pgs. 34-35, section 3.6), where registration with one of the home agents would be necessary based on a condition such as failure of another home agent as evidenced by the fact that one of ordinary skill in the art would clearly recognize.

C1. Argument of Claims 1 and 15 (see pg. 18, section G(1)(c) of brief)

Appellant argues - ...hypothetic combination...storage of addresses for a plurality of home agents in the subscriber unit prior to registration attempts with a cellular network...

C2. Response to argument of C1

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., ...prior to registration...with a cellular **network**...) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations

from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Regarding applicant's argument (see above), the applicant's argument relies on a feature(s) not recited in the claim(s).

Furthermore, the Examiner respectfully disagrees with appellant's argument. Appellant has failed to interpret and appreciate the combined teachings of the prior art Ton and Perkins that clearly discloses the claimed feature(s) as would be clearly recognized by one of ordinary skill in the art. As a note, the instant application (see pg. 7, lines 9-15; pg. 9, lines 3-6; Fig. 1) shows how the subscriber unit (110) connects (or registers) with base station (102) of the cellular network to communicate with other components of the cellular system. In particular, Ton discloses the language of *item C1* above which appears to be similar to feature(s) storing addresses for a plurality of home agents in the subscriber unit (see pgs. 2-3, [0023, 0028]; pg. 5, [0060-0062]), wherein the cellular system/network provides a list of home agents attached to a mobile IP reply message (Mobile IP RRP) through which the subscriber unit may register, and subsequently the subscriber unit stores said list of alternate home agents for redundancy support. The subscriber unit (mobile node MN) is statically configured to attempt registration with a given #1 home agent (HA1) (see abstract; pg. 3, [0036, 0040]; pg. 4, [0044]; pg. 6, [0081]). The mobile node (MN) first attempts to register with a primary home agent (e.g., HA1) (see abstract). When there is a failure of the primary home agent, the mobile node will attempt register with a redundant (or secondary or alternate) home agent (HA2) (see pg. 3, [0039-0040]; pg. 5, [0063-0065]; Figs. 1 and 4), where the

mobile node can be configured to with the address of a number of home agents and learn additional addresses by visiting other networks. As further support in the same field of endeavor, Perkins discloses of a mobile node being configured with the address of more than one home agent (i.e., primary and secondary home agents) (see pgs. 34-35, section 3.6), where registration with one of the home agents would be necessary based on a condition such as failure of another home agent as evidenced by the fact that one of ordinary skill in the art would clearly recognize.

D1. Argument of Claims 1 and 15 (see pg. 18, section G(1)(c), 1st full ¶ of brief)

Appellant argues - ...there is no suggestion or motivation...hypothetical combination...

D2. Response to argument of D1

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

Furthermore, the Examiner respectfully disagrees with appellant's argument. Appellant has failed to interpret and appreciate the combined teachings of the prior art

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Ton and Perkins that clearly discloses the claimed feature(s) as would be clearly recognized by one of ordinary skill in the art. For example, the applied references Ton (see abstract) and Perkins (see abstract; 3.6) are in the same field of endeavor in which both Ton and Perkins disclose a mobile node registering with home agents. In this case, Perkins at the least discloses the feature to store addresses for a plurality of home agents in the subscriber unit, for the purpose of IP mobility support of mobile node considerations to efficiently achieve registration as taught by Perkins (see pgs. 34-35, section 3.6).

E1. Argument of Claims 2-3, 10-11, and 16-17 (see pg. 19, section G(2), 2nd full ¶ of brief)

Appellant argues - ...no suggestion or motivation for the addition Troxel to the hypothetical combination...

E2. Response to argument of E1

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

Furthermore, the Examiner respectfully disagrees with appellant's argument.

Appellant has failed to interpret and appreciate the combined teachings of the prior art Ton, Perkins, and Troxel that clearly discloses the claimed feature(s) as would be clearly recognized by one of ordinary skill in the art. For example, the applied references Ton (see abstract) and Perkins (see abstract; 3.6) are in the same field of endeavor in which both Ton and Perkins disclose a mobile node registering with home agents. See item D2 above. Ton further discloses how the next secondary home agent (HA) becomes the primary HA and will change its ranking (see pg. 6, [0082]). Troxel discloses the feature the subscriber unit rank ordering the plurality of home agents (see pg. 4, [0051]), wherein a mobile node ranks foreign agents based on several factors such as services and capacity. In this case, Ton and Troxel both disclose how the field of endeavor recognizes that agents can be ranked for consideration such as primary, secondary, and/or back-up, in order to relay and assist network management decision procedures, thus setting up a faster registration for a particular subscriber, as taught by Troxel.

F1. Argument of Claims 4-6, 12-14, and 18-20 (see pgs. 21-24, sections G(3-6) of brief)

Appellant similarly argues - ...no suggestion or motivation for the hypothetical combination...

F2. Response to argument of F1

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by

combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

Furthermore, the Examiner respectfully disagrees with appellant's argument. Appellant has failed to interpret and appreciate the combined teachings of the prior art (i.e., applied references) that clearly discloses the claimed feature(s) as would be clearly recognized by one of ordinary skill in the art.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Therefore, the claims are addressed for the same reasons as set forth above for independent claims 1, 10, and 15.

G1. Argument of Claims 1-23 (see pg. 25, section G(7) of brief)

Appellant argues - ...prevent the use of hindsight...

G2. Response to argument of G1

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on

obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Furthermore, the Examiner respectfully disagrees with appellant's argument. Appellant has failed to interpret and appreciate the combined teachings of the prior art (i.e., applied references) that clearly discloses the claimed feature(s) as would be clearly recognized by one of ordinary skill in the art. Consequently, all applied references were well known prior art prior to the filing of the instant application.

In the present application, the Appellant is reminded that the Examiner relies on the factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

First, the Examiner considered the Ton reference alone and when compared with the claims 1-23 at issue in the present application, the Examiner found a difference(s) in the wireless communications system of the Ton reference and the present application.

Second, the Examiner considered the similar teachings found in the other applied references Perkins (A), Troxel, Jue, Tiedemann, Perkins (B), and Fehnel that

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accomplished the teachings of the claimed features of claims 1-23. The applied references Perkins (A), Troxel, Jue, Tiedemann, Perkins (B), and Fehnel teach of wireless communications systems which are in the same field of endeavor as the Ton reference. However, the Examiner also considered that for *a person with the common knowledge and ordinary skill in the art* of wireless communications systems would have obviously accomplished and developed the specific teachings and/or advantages of the apparatus and method claimed by the appellant by considering the systems accomplished by the teachings of the applied references Perkins (A), Troxel, Jue, Tiedemann, Perkins (B), and Fehnel.

Finally, the Examiner, after considering *the common knowledge available to a person of ordinary skill in the art* of wireless communications systems, concluded that Ton's teachings when modified by the teachings of Perkins (A), Troxel, Jue, Tiedemann, Perkins (B), and Fehnel would render the present application obvious by the combined teachings of the references, as set forth in the rejections.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

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(12) Conclusion

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/WJD,JR/


Willie J. Daniel, Jr.
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15 November 2007

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